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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/915,883	07/26/2001	Michael R. Bruce	AMDA.508PA	7504

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EXAMINER

CHAN, EMILY Y

ART UNIT PAPER NUMBER

2829

DATE MAILED: 12/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/915,883

Applicant(s)

BRUCE ET AL.

Examiner

emily y chan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 2-4, 9, 15, 16 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION**Claims 1-24 are presented for examination*****Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1,10, 20-22 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 10, 21-22 and 26 of U.S. Patent No. 6,488,405 in view of Nikawa ('956)

Although the conflicting claims are not identical, they are not patentably distinct from each other because the only differences between the claims 1, 10, 20-22 of the present application and the claims 1, 10, 21-22, 26 of U.S. Patent No. 6,488,405 is that the claimed application uses a near infrared (nIR) laser light at circuitry in the die and the U.S. Patent No. 6,488,405 uses a polarized laser source; however, Nikawa ('956) discloses an inspection method for testing a semiconductor device and specifically teaches the step of directing infrared laser beam in the semiconductor device for local heating (see Fig. 6 and abstract). It

abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the polarized laser source of the U.S. Patent No. 6,488,405 by Nikawa ('956)'s infrared laser beam because Nikawa ('956) discloses that "an observation for an LOC (Lead ON Chip) packaged device which has been difficult to observe from surface of a device is performed easily" (see Col. 4, lines 33-35).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5-6, 11-13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over provisionally rejected under the judicially created doctrine of obviousness-type double patenting as applied to claims 1,10,17,20-22 of U.S. Patent No. 6,488,405 above, and further in view of Nikawa ('956).

With respect to claims 5-6, the U.S. Patent No. 6,488,405 in view of Nikawa ('956) do not specifically recite the circuitry in the die to absorb laser radiation including to absorb at least one of free carriers and phonons; However, it appears that the circuitry in the die would inherently absorb laser radiation including to absorb at least one of free carriers and phonons when a laser light is directed to the circuitry in the die.

With respect to claims 11-12, the U.S. Patent No. 6,488,405 does not specify directing laser light having a wavelength of about 1.3 microns; however, Nikawa ('956) teaches to include directing laser light having a wavelength of about 1.3 microns (see Col. 10, lines 17-18).

With respect to claims 13 and 18, the U.S. Patent No. 6,488,405 does not specify to include raster scanning the nIR laser light across the die and varying the operation of an nIR laser; however, Nikawa ('956) teaches to include raster scanning the infrared laser light across the semiconductor device (see Fig. 7 and Col. 11, lines 47-48) that includes varying the operation of laser.

3. Claims 7-8, 14, 17 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over provisionally rejected under the judicially created doctrine of obviousness-type double patenting as applied to claims 1, 10, 17, 20-22 of U.S. Patent No. 6,488,405 in view of Nikawa ('956) above, and further in view of Channin ('199).

With respect to claims 7-8, 14 and 23, the U.S. Patent No. 6,488,405 in view of Nikawa ('956) do not teach the step of using the image to identify the portion of circuitry that cause the liquid crystal to change phase.

Channin ('199) discloses to coat a liquid crystal layer over an IC circuit for detecting the defect of the circuit due to the optical phase changes in the layer of liquid crystal and expressly teaches using the image to identify the portion of circuitry that cause the liquid crystal to change phase (see Col. 4, lines 23-26).

With respect to claim 17, the U.S. Patent No. 6,488,405 in view of Nikawa ('956) do not teach the step of causing portion of the liquid crystal to reach a temperature near its threshold temperature for changing phase.

Channin ('199) also expressly teaches the step of causing portion of the liquid crystal to reach a temperature near its threshold temperature for changing phase (see Col. 5, lines 32-35 " A hot region of the circuit under test ... is observed as a bright spot by the optical system 30 when the temperature for transition". Channin ('199) 's transition temperature is equivalent to the claimed threshold temperature.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Channin ('199) for using the image to identify the portion of circuitry that causes the liquid crystal to change phase into the U.S. Patent No. 6,488,405 and Nikawa ('956) 's system because Channin ('199) discloses that defect circuitry or unscribed wafers coated with a liquid crystal layer can be easily observed in numerous locations (see Col. 6, lines 18-20).

4. Claim 19 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,488,405 in view of Nikawa ('956) above, and further in view of Kantor et al ('408).

Patent No. 6,488,405 in view of Nikawa ('956) does not teach the step of pulsing the laser.

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Kantor et al ('408) teach a method and apparatus for testing an integrated circuit with a pulsed infrared laser beam (see Fig .1, 42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of pulsing the laser by Kantor et al ('408) into the U.S. Patent No. 6,488,405 and Nikawa ('956) 's system for improving IC testing as disclosed by Kantor et al ('408) (see Abstract, last line).

Allowable Subject Matter

5. Claims 2-4, 9,15-16 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reason for allowance is stated in previous office action dated on 4-16-03.

ARGUMENTS ARE MOOT BECAUSE OF NEW GROUND OF REJECTION

Applicant's arguments with respect to claims 1, 5-8, 10-14, 17-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Y Chan whose telephone number is 7033056123. The examiner can normally be reached on 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cuneo Kammie can be reached on 7033081233. The

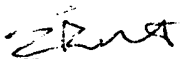
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fax phone numbers for the organization where this application or proceeding is assigned are 7033085841 for regular communications and 7033085841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 7022056123.

EC
December 9, 2003


EVAN PERT
PRIMARY EXAMINER